

MULTIMEDIA



UNIVERSITY

STUDENT ID NO

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MULTIMEDIA UNIVERSITY

FINAL EXAMINATION

TRIMESTER 1, 2019/2020

TRS2251 – ROUTING AND SWITCHING

(All sections / Groups)

17 OCTOBER 2019
9.00 a.m. – 11.00 a.m.
(2 Hours)

INSTRUCTIONS TO STUDENTS

1. This question paper consists of 4 pages including cover page with 5 questions only.
2. Attempt **ALL FIVE** questions. All questions carry equal marks and the distribution of the marks for each question is given.
3. Please print all your answers in the answer booklet provided.

QUESTION 1

A college have a block of IP address 151.13.0.0/17 to subnet and provide the IP addressing for its network. The network has the following addressing requirements:

- The Admin Office LAN will require 12 host IP addresses.
- The Lab 1 LAN will require 15 host IP addresses.
- The Lab 2 LAN will require 15 host IP addresses.
- The Library LAN will require 35 host IP addresses.
- The link from Library to Admin Office LAN will require an IP address for each end of the link.
- The link from Library to Lab 1 LAN will require an IP address for each end of the link.
- The link from Library to Lab 2 LAN will require an IP address for each end of the link.

- i. Default subnet mask: _____ (1 mark)
- ii. Calculate appropriate subnet address as per requirement shown above using Variable Subnet Mask (VLSM) approach. (9 marks)

Subnet Number	Subnet Description	Subnet Address	Subnet Mask	First Usable Host Address	Last Usable Host Address	Broadcast Address

[1 + 9 =10 marks]

Continued

QUESTION 2

- a) Describe **THREE** differences between RIP and OSPF protocols. (3 marks)
- b) Explain how does a router make decision if the destination IP address of the packet belongs to a device on a network that is (3 marks)
 - i. directly connected
 - ii. a remote network,
 - iii. does not belong to either a connected or a remote network
- c) Describe RIP protocol looping problem and **THREE** methods used to overcome it. (4 marks)

[3+ 3 + 4 =10 marks]

QUESTION 3

- a) What is the purpose of frame tagging? What are the **TWO** popular trunking protocol for frame tagging? (3 marks)
- b) Briefly explain how a three-layer hierarchical model helps network engineers to design, implement, and maintain a scalable, reliable, and cost-effective network. (3 marks)
- c) Briefly explain with example, **FOUR** types of VLAN. (4 marks)

[3 + 3 + 4 =10 marks]

QUESTION 4

- a) In IPv6 context, what is the difference between stateful autoconfiguration and stateless autoconfiguration? (2 marks)
- b) Briefly describe **THREE** types of routing approach with example to configure a router. (3 marks)
- c) Describe Cisco router boot sequence. (4 marks)
- d) What is routing metric? (1 mark)

[2 + 3 + 4+ 1 =10 marks]

Continued

QUESTION 5

- a) Briefly describe the concepts of port forwarding. (2 marks)
- b) The Cisco Router show commands used to examine information about a router and its configuration. Explain the purpose of the following commands. (4 marks)
 - i. Router# show running-configuration
 - ii. Router# show ip interface
 - iii. Router# show version
 - iv. Router# show ip route
- c) What is administrative distance (AD)? Using examples, show why a router must use it to choose between routes learned using different routing protocols. (2 marks)
- d) Compare Cisco Discovery Protocol (CDP) and Link Layer Discovery Protocol (LLDP). (2 marks)

[2 + 4 + 2 + 2 = 10 marks]

End of Paper